

	Background Work Supporting the Evaluation of Feasibility and Initial Design of an Interim Cap for the Aerovox Nearshore Area - 30MAR2017						
	Information Requirement	Relevance	A. Scope of Work - Minimal	B. Scope of Work - Expanded	Lead(s)	Estimated Schedule	Estimated Level of Effort
	<i>An initial approximation of interim cap performance objectives is key in fully scoping the information requirements 1-11 below.</i>						
1	Physical characterization of the nearshore area including the full width of the waterway	- presentation of data - impact of cap placement relative to full waterway	- use existing bathymetry and GIS to create cross sections and calculate areas	- create 3D visualization of waterway and subsurface	Mike Morris + Dan Groher	A. 1 week B. 2 weeks	A. \$3K B. \$14K
2	3D extent of DNAPL beneath the nearshore area	- determine the extent of required cap - determine areas with seepage potential	- use existing boring data to create conservative confirmed/probable and potential zones	- collection of additional shallow cores to increase confidence in zone boundaries	Mike Morris + Dan Groher	A. 1 week B. 2 weeks	A. \$3K B. \$31K
3	Groundwater discharge zones and discharge rates in the nearshore area	- design parameter for the cap - assessment of potential alteration of groundwater flow field by the cap	- use existing groundwater flow data from the Aerovox Phase 2 and 3 reports for screening level assessment - estimate conservative/"worst-case" potential discharge scenarios to determine if there are significant data gaps	- expand on existing or develop a new Modflow application to evaluate the impace of the cap - field measurement of discharge parameters	Mike Morris + Dan Groher	A. 2 months B. 4 months	A. \$52K B. \$88K
4	Flux of dissolved phase contaminants	- design parameter for the cap - assess impacts of delayed removal of source	- use existing groundwater data and flux calculation from the Aerovox Phase 2 and Phase 3 reports for screening level assessment - field measurement of flux	- add transport to the groundwater flow model application to evaluate effectiveness/impact of the cap	Mike Morris + Dan Groher	A. 2 months B. 4 months	A.\$63K** B. \$30K
5	Physical characterization of the ambient sediment	- design parameter for the cap	- conservative assumption of sediment properties based on previous experience and data from comparable sites	- sub-bottom profiling - CPT - collection of cores for lab analysis	Steve Wolf	A. 1 week B. 5 months	A. \$3K B. \$30-120K
6	Gas ebullition	- design parameter for the cap	- literature review of cap design and performance at comparable sites -Perform "sensitivity" analysis to assess gas production rates that would be problematic	- enlist support of an ebullition specialist + collection of site specific data - possible bench scale test	Dan Groher	TBD	TBD
7	Wave and current energy	- design parameter for the cap	- boat based measurements - localized hydrodynamic model application (note that this is being performed to support all Upper Harbor work)		John Lally	3 months	\$120K**
8	Ice impacts	- design parameter for the cap	- ice scour model application (note that this is being performed to support all Upper Harbor work)		Mike Morris + Tuthill	1 month	\$12K
9	Construction complexity/impacts	- incorporate into cost estimate - defensibility of remedy	- review of comparable sites	- if cost estimate is high enough, perform limited value engineering study	A. John Lally B. Corps	A. 2 weeks B. TBD	A. \$10K B. TBD
10	Ecological functionality of completed cap and impact on surrounding area	- design parameter for the cap - defensibility of remedy	- definition of biologically active zone - review of comparable sites - calculation in changes to riverway cross sectional area	- incorporation into updated functions and values assessment	Atlantic Ecology Lab?	A. TBD B. TBD	A. TBD B. TBD
11	Presumptive cap design starting point - Silver Lake (Pittsfield MA)	- similar conditions to NBH - post-cap data indicates highly successful performance	- EPA presents case study	- bench scale study (column tests) using Aerovox sediments and Silver Lake cap design - would help evaluate gas ebullition	Dave Dickerson + Dan Groher		TBD